

case, there is applied to it a prism, whose angle is gradually varied by gradually varying the position of the lens in its cup.

I have represented the large eye-lens as incomplete towards the lower edge. Optically, no injury is produced by making it complete; but I thought it possible that the projection of the lens edge might be inconvenient to the observer's eye; and also that the bluff termination of the lens might be convenient for the application of screw-motion.

The eye-piece in this state presents these advantages: it introduces no additional glass; it allows the use of a prism with angle gradually changing; and it does not disturb the corrections for spherical aberration.

It seems not too much to say that every telescope intended for delicate purposes might advantageously be furnished with such an eye-piece.

The eye-piece must have a swivel or rotatory motion round the axis of the telescope. A very simple screw arrangement, in a specimen eye-piece furnished to me by Mr. Simms, appears to place the eye-glass entirely under command.

1869, Dec. 20.

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*Seventh Catalogue of Double Stars, observed at Slough, in the years 1823–1828 inclusive, with the 20-foot reflector; 84 of which have not been previously described.* By Sir J. F. W. Herschel, Bt. F.R.A.S. (Abstract.)

The observations of double stars herewith submitted to the Royal Astronomical Society were made in the course of my earlier sweeps at Slough, with the 20-foot reflector, and would have been included in the third of those Catalogues of double and triple stars observed with that instrument which the Society has already honoured with a place in its Transactions, but for a two-fold reason, viz., that that Catalogue was limited, 1st, to stars not before (to my knowledge) observed as double; and 2ndly, to the completion of a first exact thousand of such objects; thus causing the exclusion of 84, which are here entered as Nos. 5450–5533, and which in the subsequent redaction of Catalogues 4, 5, and 6, would appear to have escaped entry, owing to non-advertence to this circumstance. The remainder of the present list is made up, for the most part, of stars included in Struve's Dorpat Catalogue, and recognised as such. Although the angles of position of these latter stars are given only from careful estimation, they are not without some considerable historical value, inasmuch as in a great many instances they are antecedent in point of date to any recorded measurements, and in several are the only existing records of position; and though in some particular cases widely erroneous, they yet present for the most part such an agreement with subsequent micrometrical measures as in the earlier stages of this branch of astronomy would have ren-

dered their evidence available in deciding on the probability or improbability of a binary connexion between the individuals. Having included them, moreover, among the data which I have been for a long time occupied in collecting and arranging in a general Synoptic History of these objects; a reference to some recorded collective statement of them accessible without recourse to the original sweeps became unavoidable.

*Summary of Sun-spot Observations made by the Kew Photo-Heliograph during the year 1869.*

(Communicated by Messrs. De La Rue, Stewart, and Loewy.)

The following table exhibits our annual *resumé* of Sun-observations made at the Kew Observatory, drawn up according to the plan of Hofrath Schwabe, in Dessau:—

Months.	Days of Observation.	Days without Sun-Spots.	Number of New Groups.	Nos. given to the New Groups in the Kew Catalogue of Sun-Spots.	
January	14	0	15	No. 902 to 916	
February	15	0	17	917	933
March	11	0	14	934	947
April	20	0	15	948	962
May	16	0	18	963	980
June	18	0	27	981	1007
July	22	0	18	1008	1025
August	19	0	25	1026	1050
September	21	0	21	1051	1071
October	18	0	17	1072	1088
November	11	0	15	1089	1103
December	11	0	22	1104	1125
Total	196	0	224	No. 902	1125

*Remarks.*—The steady increase in the number of groups and the immense areas which many of them covered, points to the approaching maximum of the sun-spot period.

The year was also characterised by a remarkable tendency of the groups to appear in successive trains, within narrow and well-defined zones on both sides of the solar equator. Such a regular successive appearance of spots along parallels of latitude had previously been observed, but it usually only lasted during a short period, after the lapse of which the distribution in latitude became again irregular. Last year the irregularity of distribution was rather the exception. It is not improbable that a distinct law may be traced at some future time in this singular behaviour, and we recommend the subject to the attention of observers.

*Kew Observatory, January 1, 1870.*